MICHAEL D HAMBUCHEN, Dept of Pharmaceutical Science, School of Pharmacy, Marshall University, Huntington, WV, 25755, TRAVIS STEVENS, Marshall University, Huntington, WV, 25755, DAVID L FINDLEY, Dept of Pharmaceutical Science, School of Pharmacy, Marshall University, Huntington, WV, 25755, and DANIEL A BRAZEAU, Dept of Biomedical Sciences, Joan C Edwards School of Medicine, Marshall University, Huntington, WV, 25755. Liver damage in a mouse model of methamphetamine overdose.

Currently, the incidence of death due to methamphetamine (METH) overdose is increasing rapidly in the US. Liver damage is a consequence of METH overdose. Our objective was to produce acute METH-induced hepatotoxicity observable by the clinical serum biomarker alanine aminotransferase (ALT).

In this study, 9 week old male CD-1 IGS mice (n=6-7/group) were administered 0 (saline), 10, or 20 mg/kg intraperitoneal (ip) METH every 2 hours for a total of 4 doses. One day after the first METH dose, mice were weighed and 30 minutes of spontaneous locomotor activity was measured. Immediately afterward, serum was collected for the determination of ALT.

Both the 10 and 20 mg/kg METH regimens increased animal stress as measured by a significant reduction in spontaneous locomotor activity and weight loss ($p<.05$), but there were no significant differences between the two doses. While the 10 mg/kg regimen did not produce any significant elevations in ALT compared to saline control, the 20 mg/kg METH regimen significantly increased ALT compared to both saline and the 10 mg/kg METH regimen ($p<.05$).

In conclusion, this 20 mg/kg METH overdose regimen produced acute hepatotoxicity in mice. It will be used in the future development of pharmacotherapies protective against METH-induced liver damage.